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Transportation Research Procedia 16 (2016) 288 – 297

**Transportation
Research
Procedia**

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2nd International Conference "Green Cities - Green Logistics for Greener Cities",
2-3 March 2016, Szczecin, Poland

The Proposition of Amendments to Certain Laws for the Betterment of Safety Conditions for the Supply of Goods in the City Centre

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Abstract

The desire to create sustainable transport in urban areas requires knowledge from the municipal government of the needs of local business entities in the supply of goods to the city centre. This article presents a proposal to amend certain laws in order to improve the strategy of sustainable transport in urban areas in the supply of goods in the city centres. The current decisions of municipal governments are based on the administrative point of view without reference to the real needs of local business entities in the supply of goods to city centres. Therefore, it is reasonable to amend the laws for the municipal government to create decisions based on compulsory cooperation with local business operators.

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Peer-review under responsibility of the organizing committee of Green Cities 2016.

Keywords: city logistics, delivery, safety conditions

1. Introduction

The problem with supply for trade points in the city centre began with an increased number of private cars in streets. Increased motorization is accompanied by a number of outside negative factors that cause pressure for parking one's personal vehicle in each free space in city centre (Lewandowski K. 2012).

The second source of the problem with delivery for trade points in the city centre is an increase in the control of road traffic by the local government. This generates a safety problem for suppliers (Lewandowski K. 2014.2).

It creates pressure on suppliers to shorten the time of the delivery process and difficulty with time of the temporary stop of a delivery vehicle to do a delivery process for the trade point in the city centre. Field research showed that the time of delivery becomes shorter due to the wide mechanization of unloading and transport

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(Lewandowski K. 2014.1). The time of delivery increases when the distance between the stopping of the delivery vehicle and the doors where the delivery takes place is extended (Lewandowski K. 2015). This problem is caused by the lack of places for realization of the delivery (Lewandowski K. 2011). The cause for this is free interpretation of the laws relating to the regulation of traffic, which do not take into account the need to stop the delivery vehicle to the realization of the delivery (Lewandowski K. 2014.2).

2. Definition of the Problem

The desire to improve the flow of traffic in the city centre and the image of the city centre free of traffic jams and friendly to residents and tourists often results in decisions that reduce the attractiveness of trade points. Decisions related to the improvement of the traffic flow include:

- Restricting the right to park,
- Prohibition of temporary stop,
- Restricting the right of entry of vehicles of a certain weight or size and emissions,
- Reducing the time of entry to the city centre
- Other.

Trade points and service outlets located in the city centre have their location based on the selection of the most attractive places where there is heavy pedestrian traffic. Historical sources confirm that town centres are areas that focus on the movement of people and are the most desirable as the location of the point of trade and services. This is due to by higher probability that “the customers will find” the trade point.

A good location of trade points may help to offer a potential client your goods or services.

A product must be moved to change its location. The delivery for the trade point in the city centre requires the arrival of the delivery vehicle, unloading the goods and displacement of cargo on the shelves for display.

From 2004 to 2012, under the DORED program, results were collected from over 900 points. The results were based on studies in six cities: Wrocław, Gdansk, Kepno, Opole and Jelenia Gora and Tourquay (UK) more than 900 points (Lewandowski K. 2012).

The number of polls over time:

Gdansk 2006 - 64,

Jelenia Gora, 2011 - 54,

Kepno 2010 - 50,

Opole 2006/2007 - 54,

Torquay (UK) 2007 - 70,

Wrocław: 2004 - 135, 2004/2005 - 127, 2006/2007 - 229, 2008 - 16, 2008/2009 - 72, 2010 – 34.

Analysis of this data helps to formulate main problems with safety in supply to the centre of the city, which are dangerous for suppliers and for other users on roads

3. Dangerous for delivery in the city centre

3.1 No rules for trucks by their drivers and owners are expected.

Legal owners of delivery vehicles are obliged to respect all laws in Poland. That includes cases of the maximum mass of vehicles, maximum axle load in vehicles, equipment of delivery vehicles, work time for drivers, rest time for drivers, maximum work time in two weeks, months etc. Using special software, which is not cheap, they must legalize all of this. Moreover, owners of delivery vehicles are obliged to keep statistics for the General Statistical Office reported every month (TVN24 Wrocław 2012). The company owner must bear the cost of establishment of the employment place for drivers. Many times owners of delivery vehicles are officially individuals who declared to the Tax Office that they use the delivery vehicle for non-profit things or their own needs. In many cases, drivers have work under a contract work or a written order or they declare their own business activity for their own needs. Another case is the health risks for the supplier. Upon delivery, they very often do not have any technical support: hand truck, tailgate etc. The supplier must use only his/her hands to carry the entire load. That could cause health problems later (Lewandowski K. 2014.2).

3.2. Overloading vehicles

The problem of overloading vehicles in Poland generates a loss for the reconstruction of roads and other engineering construction, at a cost of 6-8 million PLN per year. Transport companies more rarely break the road transport law in cases of axle load. The General Inspection of Road Transport reports the decreasing numbers of the vehicles with overload. (Fig. 1) (GITD 2013).

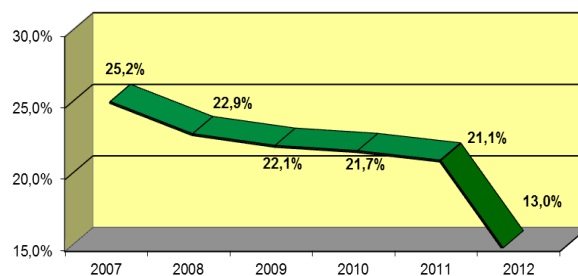


Fig. 1. Changing numbers of the vehicles with overload (GITD 2013).

The reports of the General Inspection of Road Transport shows that the total mass of delivery vehicles with a maximum mass of less than 3.5 tons, under the time of controls, fluctuated between 5-6 tons, and sometimes it was even more than 7 tons (Kobyłska Aleksandra 2014).

In the region of Lower Silesia in 2012 under the control of 38 delivery vehicles in one day, 32 had the overloading mass. The negative record-holder had a total mass of 8.2 tons. The Road Transport Inspection admits that, in many cases, overloaded trucks are unfair competition for trucks. A driver whose truck weighs up to 3.5 tons does not have a license to transport and does not need to have a tachograph fitted. This means lower costs for owners of companies for which they work (TVN24 Wrocław 2012).

The protection of roads and competition of legal transport companies has been recognized in Poland since June 2012 in the Act of March 21, 1985 on public roads. In the Act of March 21, 1985 on public roads (1985), there are three types of penalties for overloaded vehicles:

- PLN 500 – the weight of the vehicle exceeds no more than about 10 percent of the permissible mass,
- PLN 2 thousand – when the excess ranges from 10 to 50 percent,
- PLN 5 thousand – for severe violations.

Increasing the scale of growth of violations by cars up to 3.5 tons implies that it is necessary to regulate this subject. There is a gap in legal regulations here.

3.3. *Excessive working hours of drivers*

From 2004 to 2012, under the DORED program, results were collected from over 900 points of owners of trade shops and drivers of delivery vehicles. In this collection, there are only 7 opinions of drivers about their time off work. This collection shows a very dangerous trend. Only two drivers said that managers of logistics in their companies tried to respect the obligatory time of work for drivers based on the Road Traffic Law. In the remaining cases, 3 drivers said that their work time planned personally is longer than 9 hours per day. Two said that, in their companies, managers of logistics do not very often respect the time of work. They have their own business, and under the Road Traffic Law, they are obligated to personally respect the time of work. Managers of logistics, who planned their time of work for realization full planned delivery, full planned delivery, knew that the total time of this plan is much longer than specified in Road Traffic Law. One driver said that in his company there were 5 other drivers. Every day, they worked from 3 a.m. to 6 p.m. On the next day, they must work too in order to avoid losing their jobs.

Reports of the Police and the General Inspection of Road Transport show, under the Road Traffic Law that this subject is not an area of control, because the driver has their own business for their own activity. In the Act of June 20, 1997 - Road Traffic Law (1997), (in sub-article 2; Article 3), they do not have to respect the total time of work for drivers. There is a gap in legal regulations here.

A solution to these three problems is the construction a cheap recorder of vehicle parameters to measure the speed, time of work of engine, acceleration, opening door to vehicle, etc. The prototype is now being tested at the Institute of Vehicle Transport, Act of Regulation of the Minister of Labour and Social Policy of September 26, 1997 on the general safety and health (1997).

3.4. *Stopping delivery vehicles at random places*

Legal regulations of the Act of June 20, 1997 - Road Traffic Law implements tasks in the field of traffic engineering. Their interpretation is in the hands of municipal officials who plan the control of traffic lights, the paid parking zone, and must look for solutions to random situations on roads. There is no regulation to obligate road owners to plan places for unloading deliveries to businesses in cities. Polish law has no definition of the place for delivery; there is only the road and parking places. Results from the DORED program show that 87% owners of a business have no place for unloading deliveries. The place where delivery vehicles stop is different (Lewandowski K. 2011):

- From the front of the business 36%,
- From the rear side of the business 19%,
- On the street near the business 20%,
- On the sidewalk in front of the business 13%,
- In the bay near the business 1%,
- Other, where it is possible 11%.

The most common reported remarks concerning access to places for loading operations (67% from 900 points) included: the conditions (the technical condition of vehicles, time of delivery, etc.), the difficult entry to the rear side of the business, occupation of the unloading place by other unauthorized vehicles. More common are remarks by holders of unloading sites (13% from 900 points) that the Municipal Police do not fine unauthorized cars that parked on these sites and the owners of those sites must carry out the unloading in prohibited places. It is postulated that the appointment of free places for delivery should occur (Lewandowski K. 2011).

4. Review of legal basis

The delivery process can be described as:

- a) loading cargo into the delivery vehicle at the wholesale place,
- b) transport by roads,
- c) delivery time when the delivery vehicle is stopped and the supplier goes to the recipient with the ordered cargo.

The chances of occurrence of an accident under each of these components is connected with legal regulations concerning safety conditions. The loading process is described by the Act of Regulation of the Minister of Labour and Social Policy of September 26, 1997 on the general safety and health (1997). The report of the Labour Inspection shows that the number of accidents has decreased [Report on the activities of the State Labour Inspectorate in 2011, (2012)]. Transport conditions are described by the Act of June 20, 1997 - Road Traffic Law (1997), Act of March 21, 1985 on public roads (1985) and the Act of September 6, 2001 on road transport (2001). Reports of the General Inspection of Road Transport show that this process is still high (GITD 2013).

Conditions for the delivery process do not have any legal regulations.

The city as a legal entity of the local government can work on the legal rights of (pol. gmina) the commune or (Polish powiat) the county. The Constitution of the Republic of Poland specifies in Art. 164 that the commune is the basic unit of the local government (Constitution 1997). It is regulated in detail in the Act of Commune (1990). Other local government units are (Polish powiat) - Act of County (1998) and (Polish wojództwo) - Act of Province (1998). Accordingly, it is governed by legal acts – (Act of County, 1998) Dz.U.1998 No. 91, item. 578. The Act of June 5, 1998 on the county government and (the Act on Provinces, 1998) Dz.U. 1998 No. 91, item. 576. The Act of June 5, 1998. Provincial self-government. Each of them has the following rights (Table 1).

Table 1. Responsibility of local government (own work based on the Act of Commune (1990), Act of County (1998), Act of Province (1998).

Local government	Art. 7. Act of Commune (1990)	Art. 4. 1. Act of County (1998)	Act of Province (1998)
Responsibility of	1) spatial management, real estate, environmental and nature and water management; 2) municipal roads, streets, bridges, squares and traffic organization; 4) The local public transport; 11) markets and exhibition halls; 14) public order and safety, and fire protection incandescent and flood control, including equipment and maintenance of municipal flood storage.	6) public transport and public roads; 13) environmental protection and nature conservation; 15) public order and security of citizens.	Art. 11. 1. The provincial government determines the developmental strategy of the region, taking into account in particular the following objectives: 2) the stimulation of economic activity; 3) improving economic competitiveness and innovation the province; 2. The regional government has a policy of development of the region, which comprises: 1) creating conditions for economic development, including the creation of the labor market; 2) the maintenance and development of social and technical infrastructure of the importance of provincial facilities; Art. 14. 1. The provincial

			government shall perform the duties resulting from certain provincial laws, in particular: 7) spatial development; 8) environmental protection; 10) public transport and public roads.
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Each of them has a right to regulate road traffic.

The fundamental legal regulation about public roads is the Act of March 21, 1985 on public roads. (Ustawa z dnia 21 marca 1985 r. o drogach publicznych. Dz.U. 1985 nr 14 poz. 60).

Second is law about road traffic is the Act of June 20, 1997 - Road Traffic Law. (Ustawa z dnia 20 czerwca 1997 r. - Prawo o ruchu drogowym. Dz.U. 1997 nr 98 poz. 602). There in the Act of March 21, 1985 on public roads is order for Art. 20.5) about implementation of tasks in the field of traffic engineering.

Another regulation is the Act of June 20, 1997 - Road Traffic Law. (Ustawa z dnia 20 czerwca 1997 r. - Prawo o ruchu drogowym. Dz.U. 1997 nr 98 poz. 602). There is the Act of March 21, 1985 on public roads, which is an order for Art. 20.5 about the implementation of tasks in the field of traffic engineering.

The third legal regulation on road transport in Poland is the Act of September 6, 2001 on road transport (Polish: Ustawa z dnia 6 września 2001 r. o transporcie drogowym. Dz.U. 2001 nr 125 poz. 1371). There is in sub-article 2; Article 3 Exclusion of application of the provisions of the Act 2) with a maximum mass exceeding 3.5 tons in the road haulage and road transport of non-profit goods; (Polish: o dopuszczalnej masie całkowitej nieprzekraczającej 3,5 tony w transporcie drogowym rzeczy oraz niezarobkowym przewozie drogowym rzeczy). It means that the driver or owner of a delivery vehicle of less than 3.5 tons does not need to have a license to perform national road haulage in the field of passengers and the carriage of goods. This subject is not brought up in any other regulations.

In this area, there is no information about legal solutions for deliveries. In Poland, vehicles with a total mass of less than 3.5 tons generally realize deliveries in the city centre. That is the cause of very dangerous situations in delivery on roads.

5. The proposed amendments to certain legal acts to improve the strategy of sustainable transport in urban areas in the supply of goods in the city centre

Security of supplies in the city centre depends on respecting the law by drivers and the ability of rational and logical solving of traffic problems and the provision of supplies to traders in the town centre. That suggests that there is a need to add to legal regulations with new parameters:

5.1. Obligatory equipment in all delivery vehicles (even it is a personal vehicle rebuilt for delivery) of a data recorder that records the time of work, total mass and speed.

A prototype is now being tested at the Institute of Vehicle Transport (Nowacki Gabriel, Niedzicka Anna 2012):

The proposed recorder – a vehicle's black box, can be used to record data concerning the technical conditions of the vehicle, the driving technique, and the driver's compliance with traffic rules and road traffic safety in the following vehicles (Figure 2) (Nowacki Gabriel, Niedzicka Anna 2012):

- Passenger cars and specialized cars – will allow the registration of the data mentioned above and will provide evidence in the event of an accident,
- Buses and taxis – apart from the recorded data, it will help to ensure the safety of the driver and passengers and will enable the location of vehicles in the event of theft,

- Trucks - provide data on the state registration of the technical location and will contribute to a reduction in the number of accidents and ensure the safety of the driver.

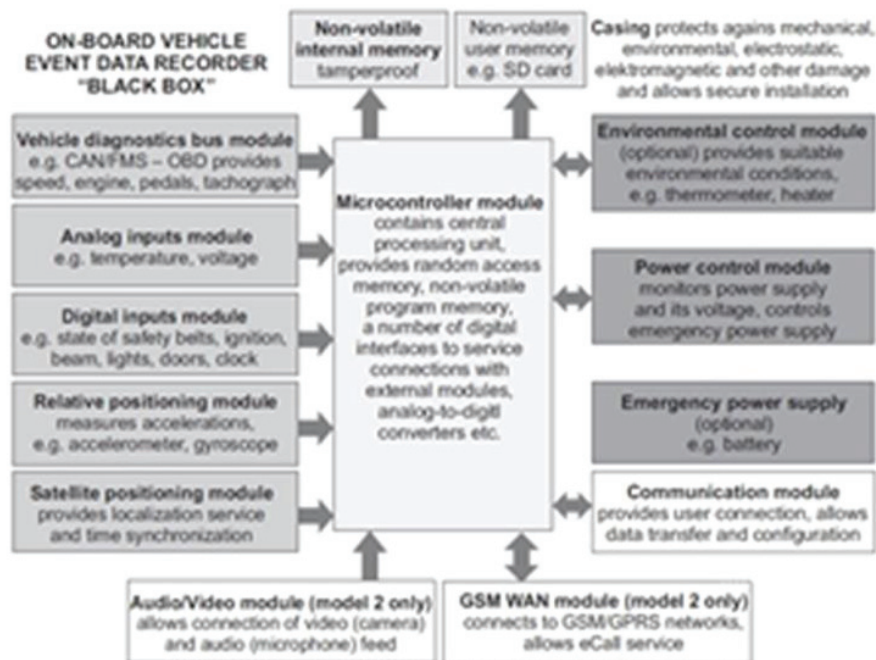


Fig. 2. The functional structure of the Event data recorder (Nowacki Gabriel, Niedzicka Anna 2012).

5.2. Obligatory equipment of owners of trade points in the city centre and owners of delivery vehicles in hand truck for realization of delivery.

Based on Dz.U.2000.26.313 - Regulation of the Minister of Labour and Social Policy of March 14, 2000. On occupational health and safety manual handling. On occupational health and safety manual handling, which contains:

Art. 21. The movement of the wheelchair

1. The maximum permissible mass of the moving load in a wheelchair after the flat on a hard surface, plus the mass of the carriage, shall not exceed:

- 1) 350 kg - for a 2-wheeled trolley,
- 2) 450 kg - with a wheelchair with 3 or 4 wheels.

2. When moving loads in a wheelchair over gradients greater than 5%, the weight of the load, including the weight of the truck, must not exceed:

- 1) 250 kg - for a 2-wheeled trolley,
- 2) 350 kg - with a wheelchair with 3 or 4 wheels.

3. Manual handling of loads on a wheelchair is prohibited on surface gradients of more than 8%, and at distances greater than 200 m.

Under the DORED program [Lewandowski K. (2012), Lewandowski K. (2014.1)], information was collected that the mass of one delivery for one trade point is about 450 kg, which means that each delivery vehicle must use a hand truck in order to make delivery. Without this equipment, the supplier cannot perform the delivery operation in

a short time. They may change the total time of delivery of the ordered cargo to the customer by dividing it into small parcels by hand. That will reduce the time of delivery and the road blocking time where there are no specially designated places for delivery.

5.3. Obligatory input to the Act of June 20, 1997 - Road Traffic Law (1997). Regulation about conditions of delivery.

There is Art. 48 (repealed) (Polish: uchylony). Changes in it:
Art. 48

1. Delivery vehicles are allowed to stop
 - 1) at the place designated by road signs - location for delivery
 - 2) on the sidewalk or section of a parking lot
 - 3) on a given stretch of road, if there are non-stop spaces or a stop at designated times and days,
 - 4) stopping may not interfere with the flow of traffic on the road
2. Stopping for delivery operations is allowed past the prohibited stopping sign or parking only with special marking
3. The place for the delivery vehicle is determined in consultation with the stakeholders

5.4. Obligatory input to the Act of March 21, 1985 on public roads (1985) that the road owner must decide about places for deliveries with the agreement of stakeholders.

Changes in it:

Art. 20. The manager of the road, in particular:

5a) determine free-of-charge places for delivery and determine the conditions for delivery to economic operators along a road in consultation with stakeholders

5.5. Input to use a new road sign: Place for delivery.

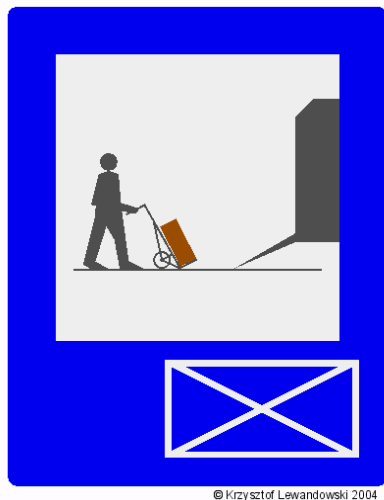


Fig. 3. D-50. Place for delivery, beginning of place (Lewandowski K. 2011).

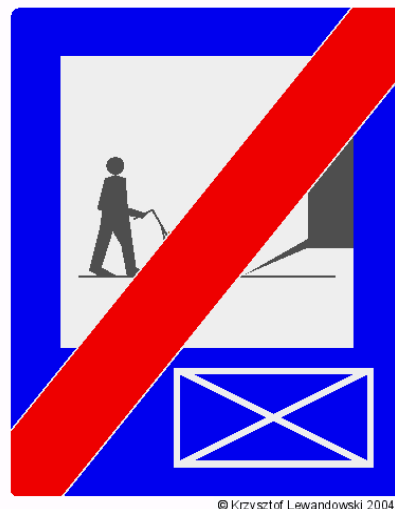


Fig. 4. D-51. Place for delivery, end of place for delivery vehicle (Lewandowski K. 2011).

5.6. Obligatory input of laws about local government in the Act of Commune (1990), Act of County (1998), Act of Province (1998), the right of responsibility of regulation that the road owner must decide about places for deliveries with the agreement of stakeholders.

Change in it:

Act of Commune (1990):

Art 7.

4a) determine free of charge places for delivery and determine the conditions for delivery to economic operators lying along a road in consultation with stakeholders,

Other regulations should be introduced:

- Obligatory training for town clerks about delivery problems under normal road traffic in the city centre,

Act of Counties (1998):

Art. 4. 1.

6a) determine free of charge places for delivery and determine the conditions for delivery to economic operators lying along a road in consultation with stakeholders

Others regulations should be introduced:

- Obligatory training for town clerks about delivery problems under normal road traffic in the city centre,

Act of Provinces (1998):

Art. 14. 1.

10a) determine free of charge places for delivery and determine the conditions for delivery to economic operators lying along a road in consultation with stakeholders.

Others regulations should be introduce:

- Obligatory training for town clerks about delivery problems under normal road traffic in the city centre,

Each level of local government should have the possibility to acquire high penalties for vehicles parked in the designated place for delivery.

Obligatory indication of a free of charge place for delivery should be designated by each level of local government, which decides about sustainable transport in urban areas.

5.7. Obligatory equipment of owners of all delivery vehicles with “the truck” status in the registration document in the tachograph.

Unfair competition for company trucks with a license is illegal and unfair for the economy. The increasing number of overloaded cars suggests that a change in laws is needed. All cars with a mass up to 3.5 tons used for the transport of goods must have a tachograph fitted, even if it is a rebuilt personal vehicle. This may help to control the excessive working hours of drivers of private vehicles.

In the case of an inspection on the road, the inspector must see that if inside the cargo box there are, for example, six pallets with sugar and the driver is the owner of the car and has a tax paper for him because this car is owned by a bakery; that means this car is used for their own activity.

If in the cargo box, there is equipment for team repair building, this car is also used for non-profit activity. If in the car box there are six pallets with tax papers for another company that means this car is used for business activity.

6. Conclusion

Amendments have been proposed for certain laws to improve strategies for sustainable transport in urban areas, the supply of goods in the city centre by reducing the number of accidents and reducing the cost of delivery fees, which translates into the cost of the final product at the point of trade. These costs are paid by customers at businesses as well as inhabitants and guests. Thus, owing to these solutions, each supplier may have a chance to have high reliability in the expected time of the delivery (Lewandowski K. 2015).

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